

EXTRA PRACTICE 23**Applications and Problem Solving Using Quadratic Equation****Use after Section 5.8****Name** _____

Example: Three times the square of a number plus five times that number is 2. Find the number.

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$$\begin{array}{ccccccc} \downarrow & \downarrow & & \downarrow & & \downarrow & \downarrow \\ 3 & \cdot & & x^2 & + & 5x & = 2 \end{array}$$

Solve: $3x^2 + 5x = 2$

$$3x^2 + 5x - 2 = 0$$

$$(3x - 1)(x + 2) = 0$$

$$x = \frac{1}{3} \text{ and } x = -2$$

The values $\frac{1}{3}$ and -2 check in the original problem. There are two numbers, $\frac{1}{3}$ and -2 .

Solve.

1. If you subtract a number from twice its square, the result is 3. Find all such numbers.

2. If 6 is added to the square of a number, the result is 22. Find all such numbers.

3. Five more than the square of a number is six times the number. Find all such numbers.

4. Twenty more than the square of a number is twelve times the number. Find all such numbers. _____
5. The product of the page numbers on two facing pages of a book is 600. Find the page numbers. _____

EXTRA PRACTICE 23 (continued)
Applications and Problem Solving Using Quadratic Equation
Use after Section 5.8

6. The product of two positive consecutive even integers is 224. Find the integers.

7. Two more than a number times five less than that number is 18. Find all such numbers.

8. The length of a rectangle is 8 cm greater than the width. The area of the rectangle is 105 cm^2 . Find the width and the length. _____
9. The area of a square is 45 more than the perimeter. Find the length of a side.

10. The height of a triangle is 6 m less than the base. The area is 56 m^2 . Find the height and the base. _____
11. The base of a triangle is 8 cm greater than the height. The area of the triangle is 120 cm^2 . Find the height and the base. _____
12. The sum of the squares of two consecutive odd whole numbers is 202. Find the numbers.
